

MATERIAL SAFETY DATA SHEET

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Version 1.13

Section 1 - Product and Company Information

Product Name	ACETONE, >=99.5%, A.C.S. REAGENT
Product Number	179124
Brand	SIAL
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ACETONE	67-64-1	No
Formula	C3H6O	
Synonyms	Aceton (German, Dutch, Polish) * Acetone (ACGIH:OSHA) * Chevron acetone * Dimethylformaldehyde * Dimethylketal * Dimethyl ketone * Ketone, dimethyl * Ketone propane * beta-Ketopropane * Methyl ketone * Propanone * 2-Propanone * Pyroacetic acid * Pyroacetic ether * RCRA waste number U002	
RTECS Number:	AL3150000	

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Irritant.
Irritating to eyes. Repeated exposure may cause skin dryness or
cracking. Vapors may cause drowsiness and dizziness.
Target organ(s): Liver. Kidneys. Nerves.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 0

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 0

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

1 °F - 17.0 °C Method: closed cup

EXPLOSION LIMITS

Lower: 2 % Upper: 13 %

AUTOIGNITION TEMP

465 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered

Section 7 - Handling and Storage

Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame.

Section 8 - Exposure Controls / PPE

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

The material may slowly penetrate protective gloves; therefore in case of spills, discard gloves after use.

Country	Source	Type	Value
USA	ACGIH	STEL	750 PPM
USA	ACGIH	TWA	500 PPM
USA	MSHA Standard-air	TWA	1000 PPM (2400 MG/M3)
USA	OSHA.	PEL	8H TWA 1000 PPM (2400 MG/M3)
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	250 PPM

Country	Source	Type	Value
Poland		NDS	600 MG/M3
Poland		NDSch	1800 MG/M3
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Property	Value	At Temperature or Pressure
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Molecular Weight	58.08 AMU	
pH	N/A	
BP/BP Range	56 °C	760 mmHg
MP/MP Range	- 94.0 °C	
Freezing Point	- 94.7 °C	
Vapor Pressure	184 mmHg	20 °C
Vapor Density	2 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.79 g/cm3	
Bulk Density	N/A	
Odor Threshold	100.0 - 140.0 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	0.303 Pas	25 °C
Surface Tension	23.2 mN/m	20 °C
Partition Coefficient	Log Kow: - 0.240	
Decomposition Temp.	N/A	
Flash Point	1 °F - 17.0 °C	Method: closed cup
Explosion Limits	Lower: 2 % Upper: 13 %	
Flammability	N/A	
Autoignition Temp	465 °C	
Refractive Index	1.359	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:miscible Other Solvents: MISCIBLE WITH ALCOHOL, DMF CHLOROFORM, ETHER	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Bases, Oxidizing agents, Reducing agents

Acetone reacts violently with phosphorous oxychloride.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: May cause skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Material may be irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

SENSITIZATION

Sensitization: Causes dermatitis.

TARGET ORGAN(S) OR SYSTEM(S)

Liver. Kidneys. Nerves.

TOXICITY DATA

Oral

Rat

5800 mg/kg

LD50

Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Tremor.

Inhalation

Rat

50,100 mg/m3

LC50

Intravenous

Rat

5500 MG/KG

LD50

Oral

Mouse

3000 mg/kg

LD50

Inhalation

Mouse

44,000 mg/m3

LC50

Intraperitoneal

Mouse

1297 MG/KG

LD50

Oral

Rabbit

5340 mg/kg

LD50

Skin

Guinea pig

>9400 UL/KG

LD50

IRRITATION DATA

Eyes

Human

500 ppm

Skin

Rabbit

395 mg

Remarks: Open irritation test

Skin

Rabbit

500 mg

24H

Remarks: Mild irritation effect

Eyes
Rabbit
20 mg
Remarks: Severe irritation effect

Eyes
Rabbit
20 mg
24H
Remarks: Moderate irritation effect

CHRONIC EXPOSURE - CARCINOGEN

Result: This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - MUTAGEN

Species: Hamster
Dose: 40 GM/L
Cell Type: fibroblast
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD

Species: Rat
Dose: 273 GM/KG
Route of Application: Oral
Exposure Time: (13W MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology, motility, and count).

Species: Mammal
Dose: 31500 UG/M3/24H
Route of Application: Inhalation
Exposure Time: (1-13D PREG)
Result: Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Species: Onchorhynchus mykiss (Rainbow trout)
Time: 96 h
Value: 5,540 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 48 h
Value: 13,500 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an

afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Acetone
UN#: 1090
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Acetone
IATA UN Number: 1090
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-Xi
Indication of Danger: Highly Flammable. Irritant.
R: 11-36-66-67
Risk Statements: Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
S: 9-16-26
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU). Irritant.
Risk Statements: Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
US Statements: Target organ(s): Liver. Kidneys. Nerves.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.